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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,725	03/18/2004	Pei-Chung Wang	GP-302676	2760

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EXAMINER

BEVERIDGE, RACHEL E

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,725

Applicant(s)

WANG ET AL.

Examiner

Rachel E. Beveridge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/18/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims 1-16, drawn to a method of metal fusion bonding, classified in class 228, subclass 219.
- II. Claims 17-22, drawn to an apparatus for metal fusion bonding, classified in class 219, subclass various.

The inventions are distinct, each from the other because of the following reasons:

Inventions group I and group II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used in adhesive bonding.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kathryn Marra on August 18, 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "126" has been used to designate both the video screen (126) and the optics module (124). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 2(124) and Figure 4(110). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to

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avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "said components" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. Please change the dependency of claim 13 or re-define components to be independent of prior claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Webb (US 3,450,857).

With respect to claim 1, Webb discloses a welding method utilizing a supply of inert shielding gas to a desired zone (Column 1, lines 12-17) and states that one embodiment of the invention is a flexible gas shielding device comprising a tubular conduit portion (Column 2, lines 25-27). Webb also discloses a porous member (Column 2, line 31) which forms the terminus for the device, and that the "conduit portion is brazed at one end to a mount 14 and at the other end to a chamber 15, thus closing and sealing conduit 11" (Column 2, lines 33-35). Webb states, "the device includes a flexible conduit having a flexible, porous, sintered metal wall along one side thereof which may be disposed adjacent said zone" (Column 1, lines 17-20). Furthermore, Webb discloses that the device is "capable of supplying a controlled amount of inert gas to the weld area" (Column 2, lines 52-54).

Regarding claim 2, Webb discloses a gas shield positioned over a workpiece at the surface of the newly formed weld and the application of gas supply (Column 3, lines 9-11). With respect to claim 3, Webb states that the device is bent to conform to the exterior and interior curvatures respectively of the workpieces, and he also states that the devices can be "reformed to conform to some other curvature as the need arises" (Column 3, lines 47-51).

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With regard to claim 4, Webb discloses a gas shielding device that can be “readily adapted to conform to and direct a protective inert gas atmosphere over a reactive material regardless of the shape or contour” (Column 4, lines 5-10).

Regarding claim 5, Webb discloses a gas coupling connected through a tube and valve to supply a pressurized inert gas (Column 2, lines 35-41) and “the gas flows through coupling 16 and chamber 15 into tubular conduit 11 and permeates porous member 13” (Column 3, lines 11-13). With respect to claim 6, Webb discloses a gas shield positioned over a workpiece at the surface of the newly formed weld and the application of gas supply (Column 3, lines 9-11).

With respect to claim 11, Webb discloses the device as able to conform to the surfaces of a cylindrical article (Column 3, lines 17-19) and that the gas shield can be reused by adapting to conform to the contour of a new weld or workpiece (Column 4, lines 10-13). Therefore, it is inherent that a weld joint or workpiece disclosed by Webb can be two cylindrical articles. Regarding claim 12, Webb discloses the invention as applied to claim 11 and states that the device is bent to conform to the exterior and interior curvatures respectively of the workpieces, and he also states that the devices can be “reformed to conform to some other curvature as the need arises” (Column 3, lines 47-51).

With respect to claim 13, Webb discloses a welding method utilizing a supply of inert shielding gas to a desired zone (Column 1, lines 12-17) and states that one embodiment of the invention is a flexible gas shielding device comprising a tubular conduit portion (Column 2, lines 25-27). Webb also discloses a porous member (Column 2, line 31) which forms the terminus for the

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device, and that the "conduit portion is brazed at one end to a mount 14 and at the other end to a chamber 15, thus closing and sealing conduit 11" (Column 2, lines 33-35). Webb discloses that the device can conform to the interior surface of a cylindrical article (Column 3, lines 18-19). Webb states, "the device includes a flexible conduit having a flexible, porous, sintered metal wall along one side thereof which may be disposed adjacent said zone" (Column 1, lines 17-20). Furthermore, Webb discloses that the device is "capable of supplying a controlled amount of inert gas to the weld area" (Column 2, lines 52-54).

With regard to claim 14, Webb discloses the device as able to conform to the surfaces of a cylindrical article (Column 3, lines 17-19) and that the gas shield can be reused by adapting to conform to the contour of a new weld or workpiece (Column 4, lines 10-13). Therefore, it is inherent that a weld joint or workpiece disclosed by Webb can be multiple tubular structures.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Webb (US 3,450,857) as applied to claim 6 above, and further in view of Corby, Jr. et al. (US 4,532,405).

With respect to claim 7, Webb lacks disclosure of optical signals for positioning; however, Corby illustrates optical cables for transporting visual signals from the terminus of a welding device in figure 1. Corby also discloses that these cables are "flexible coherent fiber optic bundles" (Abstract, lines 3-4). Furthermore, Corby states that an image of the weld puddle is used as feedback information to change the position of the optical systems (Abstract, lines 8-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bonding method of Webb with the addition of the optical signals of Corby in order to optimize the gas metal arc welding device by detecting "weld puddle characteristics and seam to puddle deviation" (Corby, Jr. et al., column 1, lines 30-37).

Regarding claim 8, Corby discloses that the system views the "weld puddle and projected light pattern for use as feedback information to control weld parameters and to move the torch for centering the weld puddle over the seam" (Column 1, lines 49-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bonding method of Webb with the optical feedback positioning of Corby in order to optimize the gas metal arc welding device by detecting "weld puddle characteristics and seam to puddle deviation" (Corby, Jr. et al., column 1, lines 30-37).

Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Webb and Corby as applied to claim 8 above, and further in view of Berg et al. (US 6,888,972 B2). With respect to claim 9, Webb and Corby lack temperature measurements for positioning; however, Berg discloses TIG welding

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of cylindrical structures with fibers present (Column 19, lines 60-62). Berg states that precautions should be taken to ensure that the heat generated during the welding process does not damage the fibers (Column 20, lines 7-11). Berg also discloses TIG welding that is "confined between the weld and the base metal at the point of fusion so that a narrow heat affected zone is produced" (Column 20, lines 13-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined welding method of Webb and Corby by adding the temperature measurements of Berg in order to ensure that the assembly process does not sink too much heat leading to a poorer weld joint or too little heat damaging the optical fibers (Berg et al., column 19, lines 62-67).

With respect to claim 10, Berg discloses the temperature sensors for welding directed to "a multiple component sensor mechanism capable of being pre-assembled and used in numerous applications and environments" (Column 22, lines 39-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined welding method of Webb and Corby with the temperature feedback positioning of Berg in order to ensure that the assembly process does not sink too much heat leading to a poorer weld joint or too little heat damaging the optical fibers (Berg et al., column 19, lines 62-67).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Webb (US 3,450,857) as applied to claim 14 above, and further in view of Corby, Jr. et al (US 4,532,405). Webb lacks disclosure of optical signals for positioning;

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however, Corby illustrates optical cables for transporting visual signals from the terminus of a welding device in figure 1. Corby also discloses that these cables are "flexible coherent fiber optic bundles" (Abstract, lines 3-4). Furthermore, Corby states that an image of the weld puddle is used as feedback information to change the position of the optical systems (Abstract, lines 8-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the bonding method of Webb with the addition of the optical signals of Corby in order to optimize the gas metal arc welding device by detecting "weld puddle characteristics and seam to puddle deviation" (Corby, Jr. et al., column 1, lines 30-37).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Webb (US 3,450,857) as applied to claim 14 above, and further in view of Berg et al. (US 6,888,972 B2). Webb and Corby lack temperature measurements for positioning; however, Berg discloses TIG welding of cylindrical structures with fibers present (Column 19, lines 60-62). Berg states that precautions should be taken to ensure that the heat generated during the welding process does not damage the fibers (Column 20, lines 7-11). Berg also discloses TIG welding that is "confined between the weld and the base metal at the point of fusion so that a narrow heat affected zone is produced" (Column 20, lines 13-16). Furthermore, Berg discloses the temperature sensors for welding directed to "a multiple component sensor mechanism capable of being pre-assembled and used in numerous applications and environments" (Column 22, lines 39-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

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invention to modify the combined welding method of Webb and Corby with the temperature feedback positioning of Berg in order to ensure that the assembly process does not sink too much heat leading to a poorer weld joint or too little heat damaging the optical fibers (Berg et al., column 19, lines 62-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel E. Beveridge whose telephone number is (571) 272-5169. The examiner can normally be reached on Monday through Friday, 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 571-1171. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

REB



JONATHAN JOHNSON
PRIMARY EXAMINER